

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:
a semiconductor element;
an external connection terminal connected electrically to the semiconductor element which has at least one electrode; and
an electrically insulating layer provided between the semiconductor element and the external connection terminal,
wherein the electrically insulating layer has a thickness in a range of from 35 to 150 micrometers.
2. A semiconductor device according to claim 1,
wherein the semiconductor element includes a transistor portion, and
wherein the electrically insulating layer is provided to cover at least the transistor portion.
3. A semiconductor device according to claim 2,
wherein the transistor portion is placed in an outer circumferential portion of the semiconductor element.
4. A semiconductor device according to claim 1,
wherein the semiconductor element includes a memory cell, and
wherein the electrically insulating layer is provided

to cover at least the memory cell.

5. A semiconductor device according to claim 1,
wherein the external connection terminal is a solder
bump.

6. A semiconductor device according to claim 5,
wherein the electrically insulating layer is
formed of polyimide material.

7. A semiconductor device according to claim 1,
wherein the electrically insulating layer is
formed of polyimide material.

8. A semiconductor device according to claim 1,
wherein the semiconductor element includes a
transistor portion, and

wherein a thickness of a portion of the electrically
insulating layer covering the transistor portion of the
semiconductor element is greater than a thickness of
another portion of the electrically insulating layer
covering a different portion of the semiconductor element.

9. A semiconductor device according to claim 8,
wherein the external connection terminal is a solder

bump.

10. A semiconductor device according to claim 9, wherein the electrically insulating layer is formed of polyimide material.

11. A semiconductor device according to claim 8, wherein the transistor portion is placed in an outer circumferential portion of the semiconductor element.

12. A semiconductor device according to claim 8, wherein the external connection terminal is a solder bump, the solder bump has a thickness determined by its location relative to the different thicknesses of the electrically insulating layer.

13. A semiconductor device according to claim 12, wherein the electrically insulating layer is formed of polyimide material.

14. A semiconductor device comprising:
a semiconductor element with at least one electrode,
an external connection terminal connected electrically to an electrode of the semiconductor element,
wherein the semiconductor element includes a

transistor portion,

wherein an electrically insulating layer is provided between the semiconductor device and the external connection terminal to cover at least the transistor portion, and

wherein the electrically insulating layer has a thickness in a range of from 35 to 150 micrometers.

15. A semiconductor device according to claim 14, wherein the external connection terminal is a solder bump, and

wherein the electrically insulating layer intercepts an α -ray generated from the solder bump.

16. A semiconductor device according to claim 15, wherein the electrically insulating layer is formed of polyimide material.

17. A semiconductor device according to claim 14, wherein the electrically insulating layer is formed of polyimide material.

18. A semiconductor device for flip-chip mounting on a wiring board, comprising:

a semiconductor element with at least one electrode,

an external connection terminal connected electrically to an electrode of the semiconductor element,

wherein the semiconductor element includes a transistor portion,

wherein an electrically insulating layer is provided between the semiconductor device and the external connection terminal to cover at least the transistor portion, and

wherein the electrically insulating layer has a thickness in a range of from 35 to 150 micrometers.

19. A semiconductor device according to claim 18, wherein the external connection terminal is a solder bump, and

wherein the electrically insulating layer intercepts an α -ray generated from the solder bump.

20. A semiconductor device according to claim 18, wherein the electrically insulating layer is formed of polyimide material.